

NOTES

ON THE

PROGRESS OF ACUPRESSURE

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"Tut, a pin!"—MASTER SHALLOW.

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ADAM AND CHARLES BLACK

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*Extracted from the LANCET for February 23, 1867, with
additional annotations.*

NOTES ON THE PROGRESS OF ACUPRESSURE.

AFTER Ambrose Paré—three hundred years ago *Deligation long and strongly resisted.*
—proposed to surgeons that they should “bid eternally adieu to all hot irons and cauteries” in arresting the hæmorrhage attendant upon amputations and surgical wounds, and use in their stead threads to the cut arteries, to stem the flow of blood, his suggestion met with little or no support during his own age or for many long years subsequently. During the sixteenth and seventeenth centuries surgeons still persevered in arresting the flow of blood after amputation and other wounds by charring over their raw and bleeding surfaces with red-hot irons, or by applying strong potential caustics. It is difficult for the mind to realise the ruthless agonies of the surgical sufferers of those times, under the dreadful double ordeal of cutting and burning—of knife and fire. “The horrors of the patient,” exclaims John Bell, “and

Ancient Surgery.

his ungovernable cries, the hurry of the operator and assistants, the sparkling of the irons, and the hissing of the blood against them, must have made terrible scenes; and surgery must, in those days, have been a horrid trade.”* Dionis, writing a century and a-half after the time of Paré, tells us that in the Hôtel Dieu of Paris,—in the chief hospital of the very city in which Paré himself had lived and practised,—caustics were still in general use for the arrestment of hæmorrhage after amputations. And in the middle of last century Mr. Sharp, of London, states, in his *Critical Inquiry into the Present State of Surgery in England*, that some English operators still employed the ligature sparingly, from their “horrid apprehension of compressing the nerves.” Speaking of the slow progress of the introduction of the ligature of arteries into England, the same author observes that—after being known to surgeons some hundred and fifty or two hundred years—it only “by degrees *crept* into practice” in this country.

Conservatism of Surgery.

Knowing these painful, strange, and startling phenomena in the History of Surgery, in reference to the deligation of arteries, I had little or no hope, when—some seven years ago—I ventured to suggest the substitution of the pin or needle for

* See his *Principles of Surgery*, vol. i. p. 151.

the ligature, that I should live to witness the *Spread of Acu-
pressure.* introduction of acupressure into general surgical practice anywhere,—though it seemed to my mind certain that if it was honestly adopted and carefully applied, it would be found greatly superior in many respects to deligation. I feel, therefore, some degree of pride in being allowed to forward to the columns of the *Lancet* the following extract from a letter which I received a few days ago from Dr. Keith, the well-known surgeon and celebrated lithotomist of Aberdeen—showing, with other facts, that acupressure had entered a new era, seeing it is now *established* as the rule of practice in one of our three Scottish Medical Schools. Before citing the letter, allow me to observe that the accomplished Professor of Surgery in the University of Aberdeen, Professor Pirrie, and Dr. Keith, have lately published a most excellent and masterly practical inquiry into the whole subject of acupressure, with careful and candid details of all their most important cases.* The operations referred to in the following incidental letter from Dr. Keith have occurred since the book was printed.

* *Acupressure, an Excellent Method of Arresting Surgical Hemorrhage, and of Accelerating the Healing of Wounds.* London, Churchill and Sons, 1867.

*Dr. Keith's
letter.*

. . . "Acupressure," writes Dr. Keith, "here is *triumphant*—nothing else being dreamt of—and, I may say, in daily use. Within the last fourteen days I have employed it in the following operations:—In an amputation of the forearm acupressure by first mode at the elbow commanded the humeral before bifurcation; and the wound healed by first intention. I removed a large recurrent fibroid tumour for the third time in ten years. Deep dissection brought me in contact with the external carotid artery. And what of that? It was looped by the sixth mode in three seconds; and the case has gone on to a wish, the wound filling up with healthy granulations, as all the integument, being adherent and discoloured, was intentionally removed; the mass was like one's fist. On Wednesday last I amputated a thigh. Three vessels by your fourth mode, and three by the sixth mode, were secured. On Monday of this week I amputated two thighs. In one four vessels required acupressure; in the other, six. The fourth and sixth modes* were used in about equal pro-

Modes of Acupressure.

* These numerical references apply to excellent descriptions and plates of the different methods of performing acupressure given in the treatise of Drs. Pirrie and Keith. In their practice they do not notice one method which I have often employed to close minor vessels, and which I have seen my friend Dr. Heron Watson, Surgeon to the Edinburgh

portions. The speed with which the vessels were closed in each case hindered the loss of blood so entirely that the sand-box only showed a spot of blood* in its centre. *Acupressure as a Hemostatic.*

“Yours very faithfully,

“WILLIAM KEITH.

“Aberdeen, 15th February 1867.”

Royal Infirmary and to Chalmers' Hospital, use. It consists in transfixing with a pin or needle one or two lines of the soft tissue by the side of the bleeding artery, the pin being laid almost flat in doing so, and with its head towards the bottom of the wound. The head of the pin is then raised up till it is at right angles to the surface of the wound, and then further turned over till the head comes to the outer edge of the wound, and its point is turned to the bottom of the wound. It is easily fixed in this new position by being thrust forward a few lines into the tissues beyond. In its movement the head of the pin is thus turned round half a circle, and in doing so closes the bleeding orifice, and overlaps it with a small quantity of neighbouring tissue. A quarter of a circle turn is sometimes quite sufficient. This kind of “over-twist” is one of the simplest and most expeditious modes of acupressure for smaller vessels. But further practice may point out many other modes of simplifying the application of the needle. *Modes of effecting Acupressure.*

* When the hæmorrhage attendant upon amputation was attempted to be arrested by the repeated application of cauteries, the amount of blood lost seems sometimes to have been very great, before the vessels and wounded surfaces were sufficiently grilled and hardened by the red-hot irons. Hence Paré, in describing one of the first cases of amputation in *Large hæmorrhages formerly.*

*Primary and
secondary hæ-
morrhage.*

Dr. Keith's letter attests the small quantity of blood that is lost when acupressure is properly used. All experience proves that it is, at least, as safe and good a *primary* hæmostatic agent as deligation. But it has been objected that it might lead to *secondary* hæmorrhage when the needles were withdrawn. On this point Dr. Keith, in the treatise referred to (p. 188), observes, in relation to his cases, about forty in number:—"All have been alike successful. . . . In not one instance have I had hæmorrhage at or after the operation; the removal of the pin or needle or wire loop has never in any one case occasioned hæmorrhage. A drop or two of blood may have come—in one or two instances—from an abraded granulation, but that is all I have ever seen. The period, on the average, which I think sufficient for the acupressure to continue is forty-eight hours, though I feel certain a shorter period would suffice."*

which he employed the ligature, boasts "I protest to God (which the company that were there can witness) that in all the operation, which was sodainely done, there was not spilt *one porrenger* of blood." (See his *Workes*, p. 1136.)

*Rarity of
secondary
hæmorrhage.*

* In the treatise of Drs. Pirrie and Keith, in addition to Dr. Keith's 40 cases, 10 capital operations with acupressure are reported (p. 135) from the practice of Dr. Fiddes of the Aberdeen Hospital. Dr. Fiddes writes me that in none of these cases - was there any secondary hæmorrhage. Dr. Pirrie has used acupressure in 32 of

“The confidence of the Aberdeen surgeons,” *Establishment of Acupressure at Aberdeen.* adds Dr. Keith, “is now so firmly established in acupressure that its use is the rule by the hospital staff” (p. 189). Three of the operative surgeons to the Aberdeen Hospital—Drs. Pirrie, Keith, and Fiddes—all now employ the needle in preference to the ligature in every wound where union seems at all attainable. I had the pleasure of meeting some time ago, at a consultation in Aberdeen, my friend Dr. Kerr, the fourth or remaining surgeon, and he ingenuously and frankly told me that—

the major operations of surgery, and in many minor ones. In only one case did he meet with secondary, or *Secondary hæmorrhage.* rather with intermediary hæmorrhage. It was a case in which the leg was removed in its upper third for medullary cancer. There was not a drop of oozing after the operation. Early—or twenty-four hours afterwards—Dr. Pirrie “relieved the anterior tibial artery from acupressure, and it instantly bled as energetically as if it had been that moment cut across.” The femoral artery was immediately compressed, the wound reopened, and the artery again acupressed. “The blood lost did not exceed a dessert-spoonful, and the whole proceedings did not occupy above four minutes.” “This,” adds Dr. Pirrie, “is the only instance in which I had ever seen any hæmorrhage from an artery on its being freed from acupressure, and I attributed its occurrence in this case to the extreme exhaustion of the patient being unfavourable for adhesion. The whole of the pins were removed in other forty-eight hours, without their removal being followed by a single drop of blood” (p. 112).

Needle supplementing ligation.

though he had no objections to acupuncture—he was too old to adopt such a revolution in practice. He added that, though he did not use acupuncture, it had, shortly before my visit, been the means of saving a patient of his in secondary hæmorrhage after amputation. The amputation was one of the thigh, and hæmorrhage had supervened some two weeks or more after the operation, and after the ligatures were separated. It was a case, he thought, where, to stem the hæmorrhage, it would have been necessary to cut down and tie the femoral artery nearer the groin than the site of the amputation. But Dr. Fiddes, who saw the patient before Dr. Kerr arrived, stayed altogether the bleeding by using a mode of acupuncture to the femoral artery; and there was no return of the hæmorrhage.

Advantages over deligation.

The great pathological and practical advantages which acupuncture possesses over deligation have always appeared to me to be simple and decided. When an artery is closed by a needle, or by any other form of temporary metallic compression, the walls of the arterial tube are placed, and held together in apposition, by a material which does not tear their coats or irritate, like thread or silk, and that can be withdrawn in a day or two, at the will of the operator,—leaving subsequently

no extraneous body whatever in the wound to prevent its speedy and complete healing. On the contrary, when deligation is employed—(1.) The two middle coats of the artery are systematically lacerated; and (2.) Its external coat is strangulated. (3.) This strangulation leads on inevitably to ulceration or molecular destruction of the external coat at the constricted part, and causes mortification of the artery at the tied point, and usually also below it,—just as a strangulating thread kills and removes a hæmorrhoid, a polypus, or a wart. (4.) The small mortified point of the vessel becomes a dead and foreign body, and hence requires to be eliminated and thrown out of the living system by ulceration and suppuration,—so that there are as many dead sloughs, however minute, in each wound, and as many consequent points of ulceration and suppuration are set up—as there are arteries ligatured in the wound. (5.) Besides, the ligature-threads, if of silk or hemp, rapidly imbibe animal fluids, which speedily decompose in them; and then, the ligatures, like so many single-thread setons,* irritate the contiguous tissues; and at last they

Pathology of deligation.

* I have seen my friend Mr. Walker, the excellent Ophthalmic Surgeon to the Infirmary of Edinburgh, employ with great success setons of *single threads* in the temple, where they soon excite abundance of irritation and suppuration.

Single-thread setons.

*Morbific effects
of ligature.*

only become—more or less slowly—set free by ulcerating entirely through the strangulated portions of the tied vessels. (6.) Hence arises the difficulty, or indeed the impossibility, of wounds containing a series of ligatured arteries ever uniting completely by the first intention; for such wounds are in the same condition as if diminutive morsels of dead flesh had been methodically and intentionally affixed with threads to their sides and walls. But other dangers follow. (7.) No surgeon would deliberately leave a patient after the shock of amputation in the neighbourhood of a foul sewer, or where decomposing animal effluvia could be inhaled. But a wound containing a series of dead, decomposing, putrefying sloughs—however minute these foul sloughs are individually—places the patient in perilous hygienic conditions; for morbidic septic poisons can be imbibed by the open and absorbing surfaces of wounds, as well as inhaled by the lungs. “A poison,” sagaciously remarked the late Mr. Travers, “admitted by a wound or raw surface, and a poison admitted by the lungs, are equally excitants of a specific constitutional irritation.”*

*Practical effects
of Acupressure.*

Professor Pirrie, in a series of most important observations and cases, maintains (p. 137) that

* See his *Inquiry concerning Constitutional Irritation*, p. 257.

acupressure “is not only the *easiest* of application, but the *quickest* method yet devised for arresting bleeding ;” and a pupil of Dr. Pirrie’s—
 Dr. Will—last week informed me that the rapidity with which Dr. Pirrie secures the open vessels after amputation, etc., by acupressure is “something wonderful,”—the movements of his fingers not being easily followed by the eyes of the attendants.

In advocating the practice of acupressure, I have always claimed for it two advantages*—viz.

First, That it would yet be found the quickest and easiest mode of arresting surgical hæmorrhage ; and

Secondly, That its use, combined with the total absence of all surgical dressings,† would *accelerate* the healing of wounds.

On the first of these points the evidence of Drs. Pirrie, Keith, and others, may now be looked upon

* See, for example, the inferences I drew of the effects of the proposed practice of acupressure, when I first communicated it to the Royal Society of Edinburgh, in the *Edinburgh Medical Journal* for January 1860, p. 650.

† In my volume on *Acupressure*, p. 116, I have, for example, stated that “I believe that after the sides and edges of a wound are properly approximated and adjusted with its metallic stiches, the best dressing, as a general rule, is—nothing, absolutely nothing,” etc. See also p. 128, etc. etc.

*Rapid healing
of wounds.*

as comparatively complete. But what of the other question—

DOES IT ACCELERATE THE HEALING OF WOUNDS ?

In his—the largest—portion of the conjoint treatise on Acupressure by himself and Dr. Keith, Professor Pirrie has described all the special cases in which he used acupressure in capital operations, with the most conscientious and scrupulous exactitude ; and I will try here to summarise the results obtained. To understand these RESULTS,—which are far more important than the mere facility and rapidity of the process,—let me first adduce the opinion which Dr. Pirrie holds as to what constitutes union by the first intention or by primary adhesion. In reference to this point Dr. Pirrie states : “The use of the ligature is attended with an insuperable obstacle to obtaining perfect examples either of immediate union or of union by primary adhesion without the formation of some pus. I have never allowed myself to call any case a perfect example of either of these two methods of healing where *a single drop of pus* was seen. Neither of these two methods of healing, in this sense, can be perfect in any case where the ligature is used. The immediate effects of the ligature—the changes by which its removal is ren-

dered possible, and its presence acting as a seton Ligature prevents healing. in the wound—render more or less suppuration at the points of deligation and in the tracks of the litagures inevitable. I never saw, in the experience of any surgeon or in my own, where the ligature was used, a perfect example of either of the two desirable methods of healing without any suppuration. I believe such a case never was and never will be seen” (p. 138).

We see in this paragraph how strict Professor Pirrie’s definition of union by the first intention Union of wounds under Acupressure. is, he considering no case a perfect example of it where “*a single drop of pus*” is observable. Yet in the course of his work he has described above a dozen cases of large surgical wounds, consisting of amputation of the limbs, excision of the mamma, removal of tumours, etc., where perfect and entire union by the first intention was obtained under acupressure, metallic sutures, complete rest of the wounded part, and the avoidance of all dressings; and he relates a series of other cases where the results were highly satisfactory, though the primary healing was *not* thoroughly and entirely perfect, because a small amount of suppuration was seen.*

* Take, for example, the first case in which Dr. Pirrie tried acupressure—namely, on the 16th of March 1864. The

*Dr. Pirrie's
Results.*

Dr Pirrie tells us (p. 66) that he has used acupressure in thirty-two cases where the "major operations" of surgery were performed, besides employing it in "many minor ones." In every instance (he adds) "its use has been *most* satisfactory."

*His first case
of Acupressure.*

patient was a boy six years of age; the malady, disease of the knee-joint; and the operation, amputation at the thigh. Four arteries required to be acupressed. The needles were removed in forty-eight hours, and no bleeding followed. "The wound," observes Dr. Pirrie, "healed by primary adhesion, but as there were a few drops of pus, I do not consider the case a perfect example of that mode of healing without the slightest appearance of purulent secretion. There could not have been more than six or eight drops of pus in all, as there was not the slightest stain upon the linen, except on two occasions, when the stains were not larger than half the size of a sixpence. This (adds Dr. Pirrie) was the first time I had ever employed acupressure, and the result produced a great impression on my mind, as it was *the nearest approach* I had ever seen to perfect primary adhesion after amputation of the thigh, or after amputation of any kind. But for these few drops of pus, I would have considered this case an instance of what—previous to the introduction of acupressure—I in vain longed to see—namely, an example of healing of an amputation-wound either by immediate union or the first intention, or by primary adhesion without a drop of pus. I have not (concludes Dr. Pirrie) called this a *perfect* specimen of primary adhesion, as I have never applied the term to the healing of a wound of any kind where a single drop of pus was seen, however gratifying the conditions in all other particulars may have been; and they could not have been more so than in this case" (pp. 66-68).

Out of these thirty-two major operations, which he has given in detail—including seven amputations of the thigh*—thirteen cases, at least, healed entirely by the first intention, or *more than one in three*. Out of his first eight cases of acupressure, one only of the wounds was cured entirely by immediate union, and without a drop of pus. Out, however, of his last twenty-four cases, fourteen of the wounds were healed by the first intention, and without a drop of pus—*or more than one in two*—showing, as was to be naturally expected, that he became more successful in his results as he became more extensively and intimately acquainted with the practice of acupressure. To state these important facts in another form—

Among his first 8 cases 1 completely united—or 1 in 8.
 Among his last 24 cases 14 completely united—above 1 in 2.

He had eight cases—among these thirty-two—of excision of the diseased mamma. In five of

* Out of these thirty-two capital operations in which Dr. Pirrie employed acupressure, only three of the patients died—a very small mortality. On the general high rate of mortality among patients subjected to operations, and particularly to the major operations of surgery, see the *Medical Times and Gazette* for April 23, 1859. Dr. Pirrie states that not a single instance of *pyæmia*, or surgical fever, had as yet been seen, either by his colleagues or by himself, in any case where acupressure was employed (p. 141). *Proportionate mortality.*

*Dr. Pirrie's
Results.*

these eight cases the resulting mammary wounds closed at once, and without a single drop of pus.*

Has any surgeon, living or dead, ever, in using deligation, met with such marvellous success as Dr. Pirrie has thus attained under the use of acupressure ?

Could all the Hospitals of Great Britain, or of Europe, or of the World—if grouped and collected together—furnish within the same period of three years, as great a number of cases of large operative wounds, where the ligature was employed, healed entirely by the first intention, and without the appearance of “a single drop of pus,” as the one little Hospital of Aberdeen ?

And let us not forget—under this question—what an immensity of mental and bodily distress, discomfort, and even danger to health and life, is necessarily avoided and averted when surgical

*First successful
mammary
case.*

* A case of removal of a very large mammary tumour was the first instance in which Dr. Pirrie saw complete union under acupressure. Three vessels were secured and “relieved”—says Dr. Pirrie—“from acupressure in forty-eight hours, without the slightest appearance of blood, and the wound healed entirely by immediate union, or the first intention—a result which (he adds) I had, up to that time, seen in two other cases only of excision of the mamma, but in them the vessels were so small as to require no ligature. The wound healed without a single drop of pus, or the slightest appearance of exudation of any kind” (p. 75).

wounds are thus closed and healed in days, *Dr. Pirrie's Results.* instead of weeks and months; and without those continuous dreaded dressings, and drainings of pus, which deligation usually, and almost inevitably, involves among its consequences.

In the way of illustrating these results let me adduce an individual case—a kind of evidence which, to some minds, is more impressive than any mode or amount of reasoning. For this purpose I might cite several, but I shall content myself with an abridgment of the last of the thirty-two cases which Dr. Pirrie details, having, for another purpose, already given (*foot-note*, p. 15) a similar abridgment of his first case. This 32d case was, like his *Illustrative case of Thigh Amputation.* 1st case, one of Amputation of the Thigh, on account of extensive disease of the knee-joint, in a “delicate-looking” boy, six years of age. The femoral and two other arteries were acupressed. The pins were withdrawn in forty-four hours, without, as the patient said, “causing any pain.” “After operation” (says Dr. Pirrie) “I thought it necessary to caution the little fellow not to touch the acupressure-pins, which he called the pins with the beautiful [glass] heads; and I promised to give them to him after their removal. He took great care not to touch them, or allow any person except myself to do so; and, to his great delight,

*Case of Thigh
Amputation.*

sent them home by his father for preservation until his return." The stump healed perfectly, and throughout every part, by the first intention; and, as Dr. Pirrie expresses it, "either by immediate union or by primary adhesion: and I am inclined to think it must have been by the former, as no medium of union is discernible at the edges of the wound." No dressings were employed except a few metallic sutures, and three strips of isinglass-plaster, which were applied before the patient was removed from the operation-table. The sutures were all removed on the fourth day. After the operation the little patient slept well—was anxious for his food—had no uneasy sensation of any kind, local or general—and was in the highest spirits. A few days after the amputation, when, observes Dr. Pirrie, "I entered the ward with the surgical pupils of the hospital, he was whistling most beautifully the 'Braes o' Mar,' and amusing himself by passing a little model carriage over an inclined plane he had got constructed in his bed. He continued to whistle the above and other airs till it was his turn to be visited!"

Modern Surgery.

"This"—Dr. Pirrie further observes—"is one of the many instances we have lately seen in the Aberdeen Hospital of a capital operation and its

after-treatment having been made *delightful* to the patients as well as to the surgeon. By the aids of Chloroform, Acupressure, no dressings, and the most perfect immunity attainable from every movement of the stump, many of the hindrances to these gratifying surgical scenes are removed. Since the use of dressings was discontinued in the Aberdeen Hospital, patients have looked forward to the visit of their surgeon as the happiest event of the day, instead of, as formerly, dreading the visit, and thankful when it was over" (p. 132). *Modern Surgery.*

And why should these "delightful" results not be sought for and attained for the poor patients in every other Surgical Hospital as well as in that of Aberdeen. "Can"—asks Dr. Keith (p. 189)—"can anything but prejudice oppose a trial, when *such* present and prospective advantages are PROVED TO ACCRUE?"

In contrasting on one occasion acupressure with deligation, I ventured to remark that, while the ligature "generally requires two persons for its application," acupressure "requires only one person."* Let me cite an interesting piece of evidence on this point. Dr. Davidson, the *Acupressure done by one person.*

* See my work on *Acupressure* (1864), p. 449.

*Acupressure
done by one
person.*

very able and zealous Medical Missionary to Madagascar, and surgeon to the Royal Court of that kingdom, is at present on a brief visit to this country. He has kindly furnished me with the following statement with regard to his experience of acupressure at Antananarivo, and under circumstances where, it is to be remembered, he had no educated professional assistant to aid him in his operations. I have myself been told by more than one English hospital surgeon that they were afraid even to try the use of the pin or needle instead of the ligature, and this too though they were surrounded by a staff of able and skilled professional assistants. Dr. Davidson's experience and success should surely serve as a sufficient answer to that weak argument against acupressure.

*Fears of some
Surgeons.*

*Dr. Davidson's
letter on Acu-
pressure.*

“During the last three years and a half,” writes Dr. Davidson to me, “I have used acupressure in about thirty cases, chiefly amputations, and also in accidental wounds, and after the removal of tumours. Although I have had no professional assistance in any of my operations, I have never had the slightest difficulty in applying acupressure. Indeed, the much greater ease and quickness with which acupressure is applied, as

compared with the ligature, are to me, in my isolated position, very strong recommendations in favour of the former.

“ I have never had a single case of secondary hæmorrhage where acupressure was used. The wounds have healed more quickly and with less suppuration than when the ligature was employed. The method which I usually employ is what is described as the third in your work. I usually withdraw the needles in forty-eight hours, and, with most surgeons, I feel much relief when I have thus the wound free of all foreign bodies. In several instances I have applied acupressure to the largest artery which is ever cut in operations—namely, the femoral. I have never seen any cases of pyæmia; but this disease is rare in Madagascar. From the comparative facility and security with which acupressure can be applied, I have no doubt that when I come back from Madagascar—some years hence—I shall find it in common use in some British hospitals where it is not thought of at present; for it only requires a fair trial of it to prove to any unprejudiced mind its superiority over the ligature.

“ Yours very truly,

“ ANDREW DAVIDSON.”

EDINBURGH, Feb. 16, 1867.

*Dr. Davidson
on Chloroform
in Madag-
ascar.*

“ *P.S.*—I have used chloroform in hundreds of cases, and it is always given upon a folded handkerchief by one of the native assistants, none of whom have ever received a professional education. People come forty and fifty miles to be operated on ; and they always ask for this ‘*ranomatory*’ or ‘*sleeping-water*,’ as they poetically term it, and it is as well known in the capital of Madagascar as in the capital of England.—A. D.”

*Number of
Acupressures
at Aberdeen.*

In the work of Professor Pirrie and Dr. Keith, above eighty capital operations are reported as treated by them and Dr. Fiddes with acupressure. As this sheet was going to press, I received a note from Professor Pirrie, dated February 26, 1867, telling me that up to this time he had himself, in major operations, successfully applied acupressure to arteries “in 137 examples, occurring under every diversity of circumstances,” besides using it in many minor operations. Eight times he has acupressed the femoral artery.